FUNGI

Chytrid Fungus *Batrachochytrium dendrobatidis*
Ecology: Chytrid fungus is responsible for a deadly amphibian disease known as Chytridomycosis. The spores of this fungus attack the keratin in frog skin affecting their ability to breathe and absorb water through their skin. These fungal spores can also damage the nervous system of the amphibian, affecting the frog's behavior (New South Wales Government, Department of Environment and Climate Change 2008).

Chytrid fungi typically live in water or soil, although some are parasites of plants and insects. They reproduce asexually and have spores that "swim" through the water. Only the amphibian chytrid fungus is known to infect vertebrate species. Individual frogs are thought to contract the disease when their skin comes into contact with water that contains spores from infected animals (Australian Natural Heritage Trust 2004).

There are several signs to look for when trying to determine if you have an effected frog. Symptoms relating to the skin include: discoloration, peeling or sloughing of the outer layers of the skin, and rough texture. Another characteristic of infected frogs' is their inability to hold their limbs close to their bodies. In extreme cases, the frog's legs actually trail behind the body. Infected individuals are typically sluggish and show a loss of appetite. Once infected, they will remain in the open, exposing them to an increased risk of predation (New South Wales Government, Department of Environment and Climate Change 2008).

Distribution: The Chytrid fungus is thought to have originated in South Africa, and was originally spread through the commercial trade of the African clawed frog *Xenopus laevis (*Amphibian Ark 2007). The basis for this conclusion is due to a specimen in a South African museum dating to the 1930's. This fungus is found worldwide. It is presently found in Australia; Africa; North, Central and South America; Europe; New Zealand; and Oceania (Australian Natural Heritage Trust 2004). It is found the across the United States (Ouellet et al. 2004), including across all of Utah (Pers. Comm. Krissy Wilson, 2008. Native Aquatic Program Coordinator, Utah Division of Wildlife Resources).

Pathways of Introduction: The means of introduction of Chytrid fungus into the United States is unknown. The earliest North American record was found in a leopard frog *Rana pipiens,* collected in 1974 (Speare and Berger 2000). There are several known vectors that can spread the fungus. Humans are a major factor in the spread of this fungus, since recreationists can pick up the fungus unknowingly from an infested area and transport it to a new area on equipment (New South Wales Government, Department of Environment and Climate Change 2008). Migratory birds and other animals can also transport the spores to new sites after picking up the spores in infected waters (Mendelson et al 2006). The frogs, themselves, act as vectors, moving the spores to new waters as they travel throughout their range (Mendelson et al 2006).

Management Considerations: There is no known method to eradicate Chytrid fungus in the wild. Decontamination of equipment coming in contact with infested waters is the

best practice in helping to halt its spread. Spraying down all equipment with 409 cleaner and then letting it dry in the sun effectively kills the spores (Watry 2006).

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